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Budgetary Control

By E. S. LaROSE,
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(An address before a joint meeting of the Institute of Chartered Accountants of Ontario, and Toronto Chapter of The Canadian Society of Cost Accountants & Industrial Engineers, October 2, 1931.)

(Concluded from January Cost and Management.)

Should a measuring method contrary to the above application be used, results might possibly become distorted. For instance, the actual total sales for product number seven might be $1,000,000 which would represent 100%. The sales of product number seven in district A might be $120,000 or twelve per cent. This would seem to indicate that only twelve per cent. of the volume distribution of product number seven was being obtained in district A, against a buying power as indicated to be 15.2% for the same product and district. The ratio basis of district A sales on product number seven to the grand total sales of product number seven could be entirely upset in making comparisons. That is, an unusual performance in some other district, which would thereby absorb a greater ratio, would cause the district A ratio of absorption to drop, even though the sales of district A might have increased.

When the market is divorced to an individual district, as originally described, and then the sales of that district are measured against the segregated market, a more definite and constant measuring stick is obtained, which can be used from year to year and immediately show an improved or declined condition.

It was found that we were getting only 34.1% of the market for product number seven in district A, as shown in figure six, while our average for the entire country was approximately forty per cent. of the market.

As another example, the total market for product number one was found to be $18,500,000 of which the district A portion equals $530,000. The actual sales of product number one in district A, were $77,200 or 14.5% of the market, while the average absorption of the total market throughout the country was approximately twenty per cent.

You will also note that District A fell below on all products, while district B was selling above the average on all but products two and three such as fifty per cent. of the potential market of product number seven while the average throughout the country was slightly less than forty per cent.

When these districts are being studied, the question of the relative size of the districts will undoubtedly be raised. The clock chart in the upper right hand corner shows the relative size of the district, and the other clock chart shows the relative size of each product class to the total volume of business. These clock charts are shown in each district. The average potential absorption of all products is then shown in the district by the solid level line.

In setting the 1930 budget by districts, we did not have the knowledge of district potentials which we had acquired before setting the 1931 budget. In 1930, we were

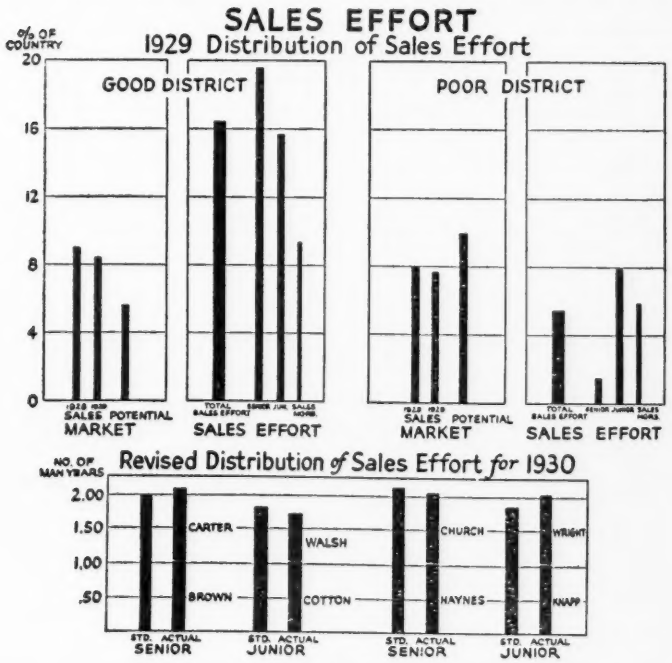

Figure 7

actually budgeting the districts with more volume than existed as now shown by our potential market studies. A company making a similar study would no doubt find that they were probably overloading some districts and obtaining such excess volume at unhealthy sales costs, such as excess salesmen, advertising expenses, etc.

In district B, for instance, our budget was below the potential and our sales were below the budget, clearly indicating that we were not getting our share of either budgeted or actual volume. In district C, the sales were above the budget, but the budget was below the potential.

In an attempt to beat the 1931 depression, we actually selected the districts which were buying below the potential market as being the best districts to aid in increasing and maintaining our volume. We did not raise the district budget to the potential in one year, as we realized that, in some cases, it would take several years to reach the buying power shown, if we were to obtain such volume on a profitable basis. We believe this move has aided us considerably in "putting over" the year of 1931 or increasing our budget in districts where we were not absorbing the potential power, and holding our own in what appeared to be normal districts.

But then, how are we going to make increased sales in poor showing districts? We must study our road force and find out whether their time has been allocated to cover the districts in accordance with the market available in the districts.

Sales Effort

Figure seven shows a comparison of sales effort with sales and potential market. It will be noted that the sales for 1928 and 1929 were beyond the potential market in the good district. Why? The sales effort placed in this district, broken down by senior effort, junior effort, and sales manager's effort, was almost three times greater than the potential market. In the poor district, the sales were under the potential for both years. Why? The sales effort was correlated less than half with what it should be in that district and potential market.

What did we do? Men were shifted from one district to another. Consideration was given to the trading areas within a district, making provision for the time required

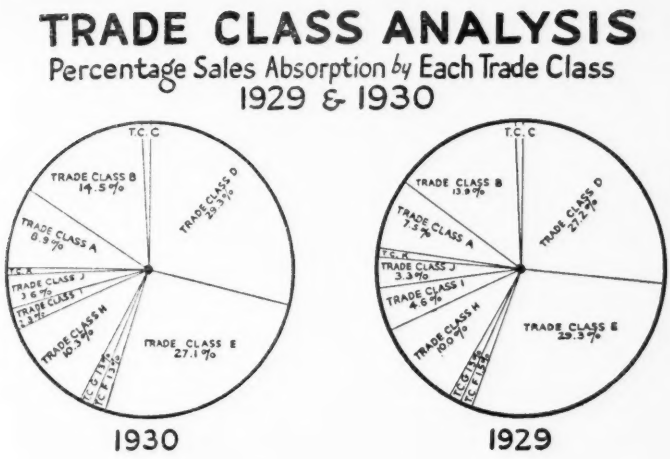

Figure 8

for mileage. For instance, the buying power in the New York City area is within close proximity, while in other areas, such as Texas, more time must be allowed and men allotted accordingly. Again, ninety per cent. of the district market might possibly be within ten per cent. of the total area. Many other correlatives were considered and finally reduced to a standard of man-years required per district. The actual or revised distribution of sales effort is shown in the lower half of the chart, which clearly reflects the change made and the aid given to the poor district which, as shown on the upper part of the chart, contained approximately sixty per cent. more buying power.

Trade Class Analysis

We not only want to know how sales are being distributed by country, state, district, trading area and customer, but we particularly want to know what trades are

buying from us. Figure eight shows our trade class analysis between foreign branches, schools and colleges, hospitals, governmental institutions, net accounts, industrial establishments, jobbers and retailers. The chart shows the contribution of each trade class to the total business and the changes in trade absorption between 1929 and 1930. We have had an analysis, by trade class, from our tabulating machines, for the past four years. As a result of such analysis we have had some interesting developments in our business which were quite beneficial.

For instance, we formerly had a general sales manager functioning over divisional sales managers for each product. That is, in the vernacular of the clothing business, an individual manager for hats, shoes, ties, shirts, clothing, etc. The lens and frame, or ophthalmic line of product, consisting of about half of our business, was practically entirely distributed through jobbers and retailers and consisted of part of the foreign branch business. The remainder of our business, known as the optical, including optical lenses and their allied instruments, was distributed to the various remaining trades.

The analysis of our volume by trade class immediately proved to us that we were hardly scratching the industrial market and, in some areas, were obtaining little or nothing. Therefore, in 1930, we changed the set-up in the Sales Division and created an ophthalmic manager for the lens and

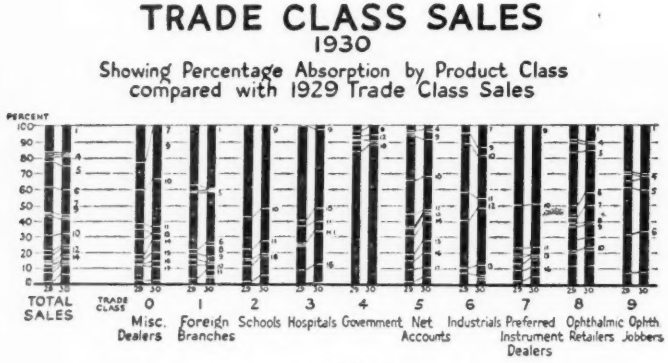

Figure 9

frame line, an educational manager for the educational portion of the instrument business, and an industrial manager for the industrial portion. While we had formerly believed that, on account of the technical application of our various instruments, it was necessary to have an individual in charge of each product group, we now have our customer dealing directly with the one individual continually, who covers all products for the trade involved. Consequently, their time is completely devoted in the contacting and development of trades rather than individual classes of product. In the first year of this set-up, our gains in industrial business were more than anticipated. We were well equipped with industrial facts to tackle the problem.

Figure nine shows the per cent. absorption of each trade class by product class giving a comparison of 1929 and 1930. For instance, it will be noted that in the industrial trade class number six, product number twelve increased its absorption from thirty to thirty-five per cent. while the absorption of product number eleven was reduced more than half. This chart clearly shows the products that each trade is buying on a comparative basis.

By an analysis of the industrial sales, the sales of each product are broken down to ten major types of industries. These ten major types of industrial sales include metal manufacturers; metal users; electrical equipment; foods; paper, pulp and lumber; chemicals; textiles; ceramics; miscellaneous and special fabricators.

However, we do not stop at this point of industrial sales analysis but take in a further breakdown of these ten major industries by the use of approximately one hundred subgroups within the ten major industries, as mentioned above.

For instance, the food and kindred product industry is broken down to sugar refiners; bakery products; canning; prepared foods; candy and chocolates; meat and dairy products. As a result of the facts now on hand, food experts were consulted to determine a further or the entire possible uses of our products in the food industry. Supplementing this work, a special catalog will be prepared indicating these possible uses. We have already developed a textile catalog, indicating the possible uses of our products for the textile industry.

Customer Budget

For the year 1931, we had completed and adopted a customer budget. The sales budget for the nineteen classes of products were separately segregated to the ten districts. Each district had a specific set of customers for each one of these classes. We found by making a special analysis of our accounts in 1929, that a customer budget was rather an easy tool to prepare and one which we earnestly desired to have. In consequence, we are amazed at what is happening today in the way of control and performance.

This chart has been made mythical, of course, to show what might possibly be an average case in business. And, by the way, the Department of Commerce is putting out reports of this sort continually especially covering their Louisville grocery survey. For instance, as shown in figure ten, thirty-three per cent. of the volume was obtained from .4% of the customers whose volume was over $100,000. Twenty-two per cent. of the volume was obtained from .4% of the customers whose volume ranged between $50,000 and $100,000 or averaged $84,100. If you study the chart, you will note that the various customers were selected according to range of size. Also, as the size of the customer became less, the volume was reduced at a greater rate including an increase in the number of customers, until it reached the "under $1,000" class of customers.

It is interesting to note that, in order for the company to obtain approximately seven per cent., or the remaining volume of their business, they were obliged to deal with a total of 7,464 customers whose purchases averaged only $101.40 each. Without going into further detail, it will no doubt be realized that it is very costly to plan, produce and account for small size customers. In some cases the total order-handling cost might be eighty cents an order to cover orders ranging as low as fifty cents each.

Naturally, with the use of this chart, our effort has been to sell the Sales Department and management on the idea of getting $1,000 to $5,000 size of customer into the $5,000 to $10,000 bracket, and the $5,000 to $10,000 customer into the $10,000 to $25,000 bracket, and so on. In such a way, we can improve our business considerably both from the standpoint of volume and profit.

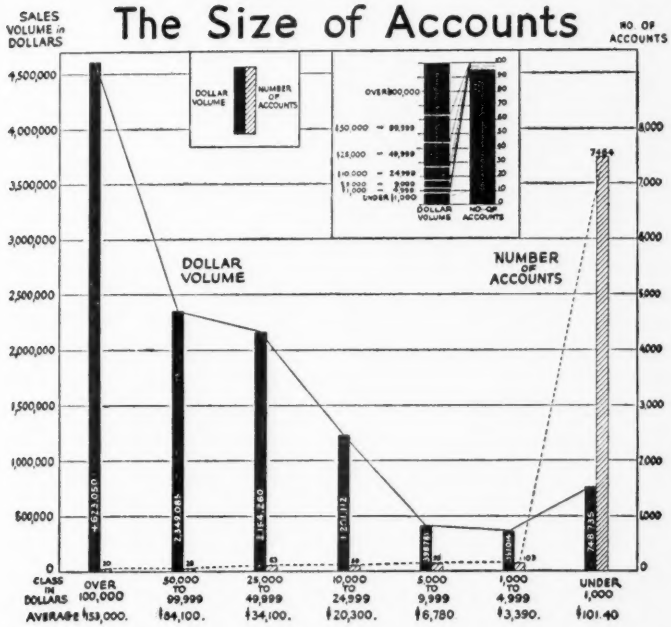

Figure 10

We deal with over 20,000 customers. Had we attempted to set a budget for each of these 20,000 customers, by nineteen classes of product, we would not only be in hot water in its preparation and cost but we would have swamped our sales personnel with voluminous records, similar to the alphabetical record of customer purchases which we were striving to get away from for control purposes. In 1929, we tabulated each month, by individual class of product, a customer absorption stack by size. That is, the customer who bought the most would appear at the top and thence the remaining customers, of that product in that district, followed by size to the lowest purchaser. Immediately, we found that we were able to cover ninety-five per cent. of our volume for the product involved in any district by selecting a comparatively few customers and classifying the remaining as "others". Should the amount listed against the budget for "others" exceed the budget

in any one month by any appreciable amount, such as being $10,000 instead of $5,000, we would then know that the condition was caused by some brand new or old customer, and we could immediately investigate and bring that customer's name on the budget, if necessary. The listing of the small accounts as "others" as a nominal budget figure does not lose the identity of any unusual performance of some unlisted customer.

Jobbers and retailers, who sell other products besides our own, were budgeted, giving due consideration to the potential market for the district involved. Our salesmen knew what we expected them to sell in the district and, moreover, where such volume could or should be obtained by customer.

Rather than go through over 20,000 records to find where our trouble is by customer and product, it can be found in less than twenty seconds. We turn to our total sales budget sheet, by class of product, as listed in the financial budget book, and find that the trouble is in product number one which is $20,000 under a budget of $200,000. Then we turn to our book of sales by districts and find that same $200,000 product budget and $180,000 of product sales broken down by district. We then note, for instance, that district number six was responsible for $16,000 of the total $20,000 shortage. We then turn to the customer budget book, district number six, product number one, and there is the total $16,000 shortage at the foot of the sheet, indicating that Bill Jones is responsible for sixty per cent. of the shortage and Tom Lang for thirty per cent., etc. It is then merely a case of a long distance call, wire, or the train direct to the customer, for there is your trouble in a nut-shell. That's cutting the job down from an analysis of 20,000 customers to one or two. Comparing what the customer is doing this year with other years does not mean a thing because we considered past years' operations and buying power when we budgeted him.

We have now made an attempt to cover the inception, reasons and needs for a budget and also, the research and methods which are used to establish an accurate sales forecast. It was mentioned that the accountant is a straight line thinker, and that when he went into the study of sales research, potentials, markets, and costs, he would conse-

quently have a finer control and in the end be better off in both compensation and position.

There is not any budget, in my opinion, that will function properly unless it is supported by a proper sales budget. Every other item in the entire budget depends upon the accuracy of the sales forecast. Therefore, we will start on sales and, as rapidly as possible, construct the complete or master budget in both units and dollars.

The Sales Budget

The entire sales budget is co-ordinated with the opinions of the sales managers, branches, and salesmen in the field. We, in the Controller's Department, do not try to originally set a definite sales budget, but we do try to assist the Sales Department, and co-operate with them. However, if we receive a "bogey" sales budget, or one which is far beyond what we think they can or will sell, we shoot it back to them, the same being true if their estimate is too low. We are continually consulting together until a mutually satisfactory total unit budget is attained.

Success in budgeting will never be attained until the sales budget is broken down into units, because only then can sales and production be properly controlled. Also, when jobbers, retailers, dealers, educationals, industrials, foreign, and other various types of trades are dealt with it will be found that the average price per unit will vary per district on account of the trade absorption within a district. In order to obtain the average price which applies to the individual district, we use past records of total units sold against total dollars received and obtain the average. For instance, in one district, seventy per cent of the distribution might be through jobbers where, naturally, relatively larger discounts would be found. In another district where only forty per cent jobber and sixty percent retailer distribution is found, a better average price could be obtained. Each individual unit entering into the sales budget is first priced by district. Then the like units and their relative values are assembled from each district and added to give the grand total units and dollars.

When the tentative total unit sales budget is completed, it is sent to the Cost Department which determines the cost of sales in the elements of material and labor. The tonnage, machine hours, direct labor hours, total hours, or whatever

unit is used for measuring the use of plant capacity, is also added to this schedule. The material and labor cost and the use of the plant capacity is then submitted to the management. In case the proposed plant usage is indicated to be sixty or seventy per cent., the management might possibly find it necessary to create an increase in the sales budget. Should the proposed usage be indicated to exceed 100%, it would then be necessary for the management to appropriate expenditures for increased facilities, or else reduce the proposed sales budget. The latter plan is usually the most conservative, as many failures have been caused by over-expansion.

Production Budget

Before the sales unit budget, and consequent use of capacity, is finally determined it must be presented to the Production Division in order to be tested and possibly tempered according to inventory conditions. For example, there might be a sales budget for 1,000 units, while the production budget for those units might necessarily be set at 800 or 1,200 units, according to stock conditions. Therefore, while the production unit budget is co-ordinated with the sales unit budget, the quantities are often distinctive, on account of inventory conditions.

In preparing the allowable production budget, turnover must be given first consideration. The Production Division must be dealt with on the basis of attempting each year to attain a better turnover, both of process and finished stock. The production budget must be handled also, having in mind the allowable inventory for the new units which were developed and are to be made and sold in the new year. The dates as to when the new products are going to be produced and when they will be ready for sale must also be considered in both the sales and production budgets. Balance orders, if any, at the end of the year, must be considered in making the sales budget, because the Sales Department might possibly include the balance order quantity in determining their normal sales budget. Such a set-up would result in an easy job for the sales force and also a sacrifice in sales quota for the company. The Engineering Department is expected to submit, by October 1, 1930, lists of the new units and the dates when they will be ready for production during 1931. After that time any new projects started are, most generally, for the 1932 sales.

Budget of Engineering Expenditures

The complete engineering expenditures are budgeted and segregated as to the scientific bureau, research and development bureaux, drafting, specifications, and other functions of the Engineering Department. We have attempted to increase these expenditures each year, by from two to eight per cent of volume, because we realize that our continued existence depends almost entirely upon the engineering development, especially of new products. It might also be added that while our Engineering Department, a few years ago, were spending eighty per cent of their effort on special orders, we are now attempting to spend eighty per cent in the development of standard unit lines of product in order to obtain re-sale benefits.

When the Engineering Department completes a new product, the tool expenditures are then authorized by them in accordance with the quantity to be sold as originally estimated by the Sales Department. When the Engineering Department reviews the sales budget a further check is made. For instance, should the Sales Department set up a total of 5,000 units, the Engineering Department would then go back to the Sales Department and state that 20,000 units should be sold rather than 5,000, in order to absorb the tool expenditure that had been allowed according to the original sales estimate. Again, if the Sales Department say they are only going to sell 5,000 units and the 20,000 new units were in process or finished for them, the consequence would be a four years' stock. Under such conditions the Production Department would also take part in going back to the Sales Department for a new estimate.

Upon establishing a complete co-ordination between the Sales, Production and Engineering Departments, the completed two unit budgets are then secured. That is, a sales unit budget and a production unit budget are established, the difference being an increase or decrease to inventory. The unit sales budget is computed and segregated by nineteen main classes of product, by customer and by district, and then summarized.

Seasonal Monthly Trends and the Sales Budget

The next step is to place the sales budget on a seasonal monthly trend. That is, a seasonal monthly trend has been

determined for each one of the nineteen main classes of product. It was found that each product had its own particular characteristic trend. A five-year study has been made and tempered in each subsequent year in order to determine these trends.

Seasonal monthly trends are extremely important for measuring actual performance against the budget. As an example, a product might indicate a $300,000 volume for the first quarter, which, if averaged, would be $100,000 monthly. However, when seasonalized the goal might then be $120,000 for January $110,000 for February, and $70,000 for March. On the former averaging basis, the Sales Department might think they were doing well to obtain $100,000 for January, while on a seasonal basis they should have obtained $120,000. By the old method of averaging, the loss in volume would not be known until the end of the first quarter, or under extreme variations until the end of a six months', or annual, period.

When our sales manager received his first budget for the month of January, 1927, and when at the end of the month a red figure showed that he was under, he came in to my office and argued that we should put the budget on a quarterly averaging basis, because he was going to make it up in February or March. He hated to see red figures and argued that he did not see the necessity of having a daily sales record as our monthly record was good enough, even though it was obtained on the twentieth, or thereafter, during the following month. Inside of four months he was coming into the office every day, both morning and afternoon, putting his arm around my shoulders, and asking "How are we coming *today?*" It seemed as though he just could not get into the harness quickly enough after he realized what it all meant. After being on a level line of sales for some seven years, he showed an increase of over twenty per cent in 1928, followed by a further increase, or a total of fifty per cent increase in volume in two years. Unfortunately he passed away about the middle of 1929, and it is exceedingly regrettable that he was not able to see the results of his interest and efforts.

It might be mentioned that, in the year of 1927, we only had a sales and inventory budget. That is, we knew that when the sales were low, the inventory should go up,

and that when the sales were high the inventory should go down. While the sales budget was fairly accurate, the inventory budget was more or less based on a composite computation. It rested on past performance rather than the standards which were immediately developed and used in 1928 and thereafter. We have mentioned previously that one of the features which was adapted to our plan of budgetary control was that of stabilizing production and employment. Therefore, although our sales budget is laid out on a seasonal basis our entire production budget is laid out on a level line throughout the entire year. We will assume the budget for a line of product, to be $960,000, which, when divided by twelve, equalled an average, for production purposes, of $80,000 per month. Assume that during the first seven months and twelfth month of the year the seasonal sales are below the average line. When the seasonal sales are below the level line of production, the inventory increases, and when the seasonal sales are above the level line of production, the inventory decreases.

Practically the only variation in labor is caused by the variation in the number of working days per month, outside of the inventory shut-down in December. As a result of pre-determined planning, the yearly labor fluctuation, above and below the average monthly number of employees, has changed from 33.5% above average and 10% below average number in 1924, to 3.1% above average and 2.6% below in 1929. In the year of 1930, during a period of depression, the maximum above average was only 4.3% and below 4.2%. The variation for the first five months of 1931 has only been 2.6% above and 1.8% below. The result of such reduced labor turnover has naturally increased the good will of the company's labor, given constant employment to skilled labor, improved quality and service, and reduced many factory overhead expenses, particularly tool and machinery repairs and idle time.

Process Operations

Many industries believe that they are working on a straight line production plan, or, for instance, 10,000 units per day. However, a study of the various sizes involved within these 10,000 units might indicate an abrupt rise and fall by size. We have developed straight line production

by individual size, and in so doing, in our lens line we have dealt with over 40,000 varieties.

I am going to show you two charts, in order to bring out how you can make a study of process operations, both machine and departmental. These charts have been made from actual studies in professional experience. That is, one of the first studies we made when systematizing was that of the process flow of material.

Figure eleven shows a process study of a steel industry. It happened that they were obliged to cut down electric power consumption at the time, and therefore, first used the open hearth to get hot metal and then duplexed the metal to the electric furnaces.

After we made this chart, we removed zigzag operations between departments, and then made departmentalization

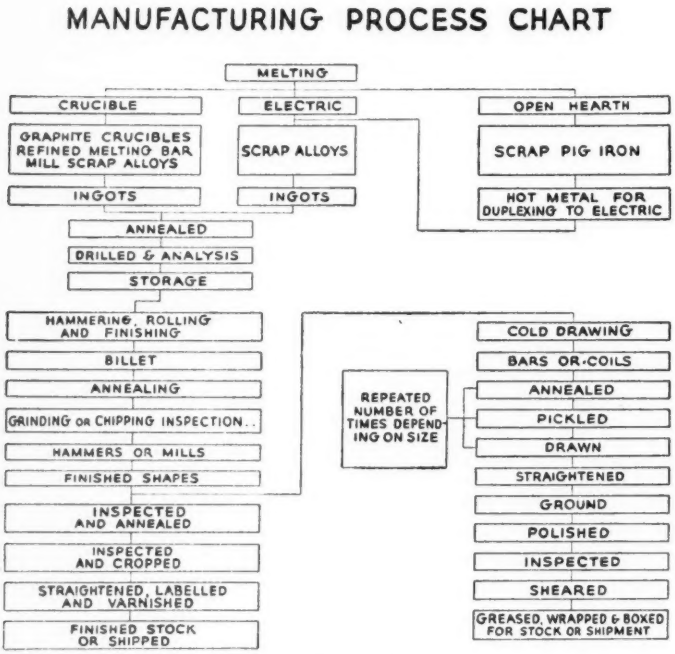

Figure 11

for a cost system. Also, against the departmentalization chart, we added the floor space, the investment in the department, and the number of operatives. You will find such charts to be very helpful in methods work. I want to also show you a machine process chart, figure twelve, which was used in 1920 in making a survey of a large cereal company.

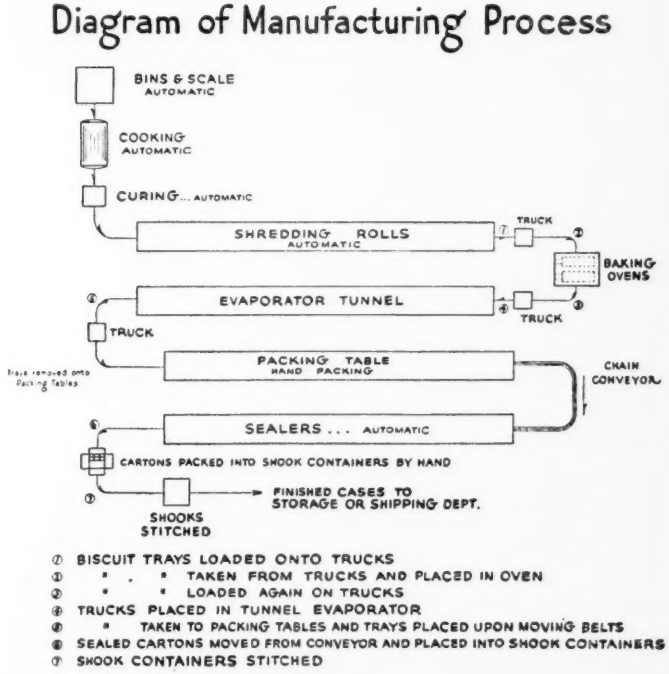

Figure 12

Without a doubt, this company had a show place, which many people visited annually. Three plants were involved, being located in three countries. In our various studies, we included this chart, upon which the hand operations were indicated by various numbers. The management were amazed to find that their operations were only about forty per cent mechanical. As a result of this simple chart or

picture, the management called in machine consultants and eventually changed their operations from about forty per cent to eighty-eight per cent mechanical.

In our own plant we are continually making process studies of movements from floor to floor and department to department, in order to attempt to make a straight line flow of all operations.

One job we did in the way of a process study was for a large match concern which had been in business for many years. It was found that they were shipping the raw logs from the north-west. When the logs reached the match plant, they were cut into match blocks, at a block plant building, and then cut into match splints in the match machines. The cutting of match blocks at each of the many match plants naturally involved a considerable investment in buildings and equipment. The process study eventually proved that all block cutting could be centralized in the west, and also that, instead of single block saws, multiple saws could be used. As a result, considerable savings were not only made by centralization and of investment, but particularly a saving of forty per cent in freight that had formerly been paid on the waste from the log, which occurred when making the match block.

Overhead Budget

In referring to the profitgraph, figure four, the variable overhead allowance at each point of volume had been both determined and known during the course of developing the sales and production budget. Therefore, the next step in the budget procedure is to set up a control for overhead with an attempt to have the overhead completely absorbed through manufacture, and not cause a large under-absorbed overhead, which would be a direct charge to profits or surplus.

In reviewing the overhead situation, there are times, especially during periods of depression, when it might be found profitable to include and produce stock items on your production budget, rather than have a large under-absorbed overhead as caused by lowered plant usage. However, there are policy matters to be considered, not only on the basis of whether the goods can be sold at a future date, but also as to whether the savings in overhead would offset the carrying charges involved in the investment of such increased inventory.

In 1928, as a result of continued budget reviews made by the management with its divisional managers, our indirect labor and expense controls, as adapted to the budget, proved to be inadequate. The accounts were bulky and were not segregated on a functional or organization basis. Therefore, it was almost impossible for the management to hold any individual manager responsible for an overage against the budget. It was our first experience in budgeting indirect labor and indirect expense, and due to the large overage, in excess of $100,000, our manager finally agreed to allow us to install a functional set of accounts to cover indirect labor and expense.

The new indirect labor control involved 143 main departmental accounts, being further segregated by divisional managers and superintendents, and also by eight main divisional overhead points. The new indirect expense control amounted to approximately seventy accounts segregated in the same manner. In summary, our entire indirect factory operating accounts were fitted to our facilities and organization in a custom made manner, rather than according to the old-fashioned cut and dried method of taking a fixed system from a book.

As a result of the new set-up, which involved the control of several million dollars, we finished the year of 1929 within $1,002 of our budget. That, I believe, proves that such segregation was very profitable for the management. The results of 1929 could not be stated to be a lucky break, as we again enjoyed the same control in 1930, and, at the end of six months in 1931, were within $3,914 of the overhead budget.

A standard of overhead, obtained under normal conditions, is used, rather than a standard created through unusual conditions, such as might be caused by the depression during 1930-31. Through the use of such a standard overhead, we are able to indicate to the management the exact amount of over- or under-absorbed overhead which will be incurred as a result of the operations for the year. We are also able to deal with the opening inventory, charges, cost of sales, and ending inventory, on a standard overhead basis. Naturally, if your volume were to be low for 1931, you would not be able to charge in the under-absorbed overhead, as a result of idle usage, if you were going to meet

with competitors who had greater usage of their plant and consequent normal overhead absorption.

As an example of our overhead control, it might be mentioned that we had a slight cut in direct labor during the first five months of 1931, which would have caused an under-absorbed overhead. However, the actual overhead was almost automatically cut, in order to meet the overhead standard, which resulted in being in perfect balance with the forecasted overhead variance.

In developing the actual overhead to be allowed, it is not based on last year's, or any previous or average year's performance. It is based on a standard allowance according to the volume to take place in the year being budgeted. Having a break down of our complete indirect labor and expenses, we are able to use various selected indices for measuring the allowable overhead for each item of labor and expense. A chart is used for each characteristic type of indirect labor and expense. The variable volume scale is indicated horizontally across the base of the chart. The variable number of people or dollars involved in the indirect labor or expense control is indicated vertically at the left side of the chart. A curve is then plotted, which might indicate, for instance, that at 40,000 units per week sixty stock clerks would be allowed, while at 50,000 units of production seventy stock clerks would be allowed. This method can be applied using units, machine hours, labor hours, tons, or any other unit of measure, which will properly correlate with the various indirect labor and expenses involved. An individual standard is then determined at each point of volume for power, stock clerks, inspectors, truckers, tool repair, machine repair, etc. For instance, in measuring power we use machine hours, while for production clerks the number of units is used as an index. It is believed that each industry has its own particular problem and that there is no set rule for the unit of measurement to be used for determining the allowance. However, a genuine control can be obtained through the adoption of a variable standard for each item of indirect labor and expense.

Before leaving this point, it might be mentioned that the functional set up of our indirect labor has given us a genuine opportunity for measuring the cost of planning

and scheduling each of the various lines of products, or, in other words, a direct segregation of costs which were formerly indirect.

When the indirect expense and labor budgets are approved and a standard is set for each division, it then becomes necessary to spread these budgets on a monthly basis throughout the entire year. You must consider items such as heat, light, repairs, moving, etc., on a seasonal expenditure basis in order that your monthly budgets of these items will be as nearly accurate as possible.

The budgeted overhead is then given to each of the factory superintendents in its complete form, having been broken down to cover the total for which each individual superintendent is held responsible. It is segregated by fixed, semi-fixed, and variable groups of items, indicating a standard for each item and a total standard for the division. It can be sincerely stated that with the use of such tools, our superintendents are keeping their overhead almost in perfect line with the standard. They know what is involved, and in cases where direct labor had been cut to any greater extent, they work very hard to reduce their variable allowance to the extent of offsetting the increased ratio of fixed charges, in order that they may keep within the allowed total standard overhead. Our works manager has actually made the statement that he has been greatly relieved by the use of this control, and that his superintendents were now genuine managers of their own divisions.

The final pre-determined standard overhead is now applied to both the cost of sales and expenditure budgets. That is, we had previously determined the labor and material cost in the cost of sales budget, and the labor and material expenditures involved in the consequent production budget. We now have completed the total cost of sales, and the total expenditure budget.

Budget of Inventory Increase or Decrease

In determining the budget of inventory increase or decrease, it is now merely necessary to stack the cost of sales by product class and by month, against the expenditures by product class and by month. The deviation between the cost of sales and the expenditure budget for each month now becomes the budget of inventory increase or decrease per month.

Product A.

Month	*Expenditures*	*Cost of Sales*	*Inventory Monthly*	*Inc. or Dec. Accumulative*
January	$100,000	$80,000		$20,000
February	90,000	70,000	+20,000	+ 40,000
March	95,000	115,000	—20,000	+ 20,000
etc.				

We have actually budgeted the inventory increase or decrease by nineteen main divisions of product, both on a monthly and accumulative basis for the entire year.

In all of my experience I have never found a set-up which proved as satisfactory in being able to budget the inventory increase or decrease. As previously mentioned, one of our most severe problems was that of controlling inventory, especially due to the many thousand varieties involved. Inventory losses during the years 1924, 1925, and 1926 were most severe, due to style changes, stagnation, and obsolescence.

Inventory is generally the most vital item to control in industrial operation. As an example, which I have given many times, a plant might have a volume of $1,000,000, a cost of sales of $600,000 and a net profit of five per cent., or $50,000. The turnover might only be two times, on account of the length of time taken to produce the article, and the average inventory involved would therefore be $300,000. A ten per cent. increase in inventory would result in sixty per cent. of the profits being placed in inventory. A ten per cent. stagnation or obsolescence of this inventory would cause a shrinkage of sixty per cent. in the profits. Therefore, inventory increase or decrease deserves the utmost consideration.

Our total inventory is several million dollars. In 1929 we were within $40,000 of the budget inventory, $30,000 of the increase being due to the inception of new products. In 1930 the inventory was within $5,000 of the budget. In 1931, our budget of inventory control calls for a $300,000 decrease, as a result of improved methods and increased turnover, and at the end of five months, we are within approximately $1,000 of our budget.

In the development of the profit and loss statement, we now have completed the sales, the expenditures, including

material, labor, standard and actual overhead, the inventory increase or decrease, the cost of sales at standard, and have thereby arrived at the standard gross profit.

It might be mentioned that we apply against the inventory a standard reserve for obsolescence, which is budgeted and applied on a monthly basis. The reason for using such an obsolescence reserve was previously covered. During the past three years, 1929, 1930 and 1931, our control of obsolescence has been held within the budgeted figure. It seems that both the Production and Sales Departments are watching obsolescence continually from a budget viewpoint, and that a genuine control has been obtained.

Before leaving the set-up at the point of gross profit, I do not want you to get the idea that because our budget is made on an annual basis, it is of a fixed nature. We do not disturb our annual budget, at any time during the year, on account of the amount of work involved in its complete preparation, and on account of the faith and courage which would be continually lost through adjustments. However, we do have what we call our flexible adjustment schedule. At the end of each month we submit a schedule which is based on sales variation, and any possible process cost variation. It would take considerable time to explain the method of arriving at this flexible set-up. The results are, for instance, that we show that on product A the labor is $5,000 under the budget, and, due to conditions, the allowable variance should be $8,000 under the budget. The third column on this schedule would then show that an additional cut of $3,000 was necessary. The same would be true for direct material. The final statement would then show, by each class of product, whether it was necessary to cut or spend, resulting in a net allowance for the entire plant.

A variable control will also show that, for instance, should sales be four per cent. under the budget, and cost of sales six per cent. under the budget, the expenditures, if properly balanced through the flexible schedule, would be six per cent. under. Such control would automatically result in the inventory being in line with the budget. Our ratios of cost of sales and expenditures were practically in balance at all times during the past three years, as we previously indicated by the statement of the results of inventory control against the budget.

Budgeting Expenses

The next step in the development of the budget is that of budgeting administrative and selling salaries and expenses. Naturally, we set up these expenditures in line with the gross profit available, in order to obtain the desired net profit. Originally, we had a flat rate of selling expense that was used in general throughout the entire line of products. However, we knew that if we were to obtain a true and accurate sales cost it would be necessary to rebuild our entire selling salaries and expenses on a functional basis, similar to the set-up which was made for the control of indirect labor and expense.

When we completed our set-up for determining the actual distribution cost of a product class, we found that, for instance, rather than the old flat rate of twenty per cent. for all products, the rates created varied all the way from ten per cent. to fifty per cent. for each class of product represented. This set-up was certainly different from the old method. Many department heads argued that we would soon put them out of business, and consequently were at first not over-willing to fact the true cost, especially those where the cost was found to be far above the former normal rate of twenty per cent.

During the first year of this set-up, we had a comparatively small amount of our expenses charged directly to the product classes. However, at the present time, we have over ninety per cent. of our expenses directly charged to product classes, and in another year we will no doubt increase that percentage. While all expenses are made direct to product class, the salaries are first segregated directly to groups of product classes, which are covered by individual salesmen. For instance, in the vernacular of the clothing industry, some salesmen sell shirts, collars, and neckties; others, suits, topcoats, and overcoats, etc. When the salesmen are selling three main product articles, such as shirts, collars, and neckties, their salaries are spread to these three products on the basis of the volume involved, as set up by the predetermined budget. We not only have the total control of salaries and expenses by product, but also have such items controlled by district and by product.

In developing selling expenses and salaries on the basis of gross profit available and net profit desired, there are some cases where management might actually set up a budget which would exceed the amount allowed, for a current year, in order to obtain future benefits. That is, a normal advertising program for a product might be $50,000 per year. However, on account of a new product entering into the line, the advertising might be increased fifty per cent., and show a deliberate net loss, on the basis of anticipated recovery or benefits to be derived from future operations. Again, in a similar manner, a territory might need and be given an unusual sales effort in a particular year, which would thereby cause a predetermined loss. It is evident that the use of budgetary control, in this instance, clearly informs management as to their future destiny.

When the budget of selling expenses and salaries is completed, a standard distribution cost is determined, and used during the entire year for both estimating and for product profit and loss statements, the latter of which will be subsequently described.

The development of sales salaries and expenses by class of product has more than paid for itself. Rather than put us of out business, it has given us a true cost to deal with on a competitive basis. When it is realized that most industries work to their utmost to obtain factory costs to the last mill, it can not be understood why they have stopped at that point and neglected to analyze, in many cases, one third of the total cost or that which is involved in distribution. When you have made an analysis and compiled a set-up for distribution costs, you will no doubt find it a more interesting problem than that with which you were confronted in analyzing factory costs. In our own case, the possible savings in cost and increases in revenues through correct selling prices, were much greater, on a ratio basis, than the savings which could be obtained in the factory.

When the total budgets are completed for selling salaries and expenses, they are then spread on a monthly basis, taking into account any seasonal expenditures, such as shipping, advertising, broadcasting, etc.

We have now arrived at the net profit by class of product and for the entire business. Upon completing the total profit and loss statement, the general costs and revenues are deducted from the consolidated statement only, and not by product class.

Rather than it being necessary for the management to wait for the annual profit and loss statement, which is usually completed several months after the year has ended, they now know both the monthly and annual picture fourteen months ahead of time. Their fort has been built before the attack, and they can immediately work on policy matters throughout the entire year. They can adjust what has been put before them, rather than hope for fourteen months that the results will bear considerable luck. The work of the managers for the forthcoming year is practically completed, and it is now merely necessary for them to see that everyone meets the goal that has been assigned to him. It is unnecessary to make a complete or elaborate review of the business from week to week, or month to month, as the actuals against the budget immediately indicate when and where any possible variances might have occurred. It is believed that you will generally find that when your management is given such a tool they will then be thinking of what is to be done in 1932 and 1933 and feel that the job for 1931 has been practically completed.

Although we have developed and used nineteen actual and budgeted main product class profit and loss statements, we have also found that it is profitable for us to make a quarterly statement of profit and loss by the product subgroups within each one of these nineteen main summary statements. That is, again in the vernacular of the clothing industry, we might have an individual monthly profit and loss statement for clothing, shoes, hats, etc. By a statement of product profit and loss we mean that you would take the clothing portion of the business, for instance, and break it down by style sub-groups, such as single-breasted suits, double-breasted suits, two-piece suits, tuxedos, etc. You would not go into the color or kinds of cloth in the first or original set-up until you had found where trouble existed.

We had thought that we had a valuable segregation by using nineteen main product profit and loss statements.

However, I can assure you that, when we broke each one of these nineteen profit and loss statements into product sub-groups, we were very much more enlightened. These statements are not of a cumbersome character, and only cover a single sheet for each product class, being largely developed by the use of our tabulating machines.

The former profit and loss statements by main class of product, might indicate to the management that a ten per cent. net profit was being derived, which to them would probably be entirely satisfactory. However, upon reviewing the rather simple profit and loss statement by **product,** and finding that there were profitable products within this main class which were carrying other products sold at a loss, the management would undoubtedly become alarmed and take action. That is, a product with sales amounting to only two per cent. of the total sales of the main class, might be shrinking the profits of the ten per cent. class, on account of being sold at a loss. Under such conditions you would undoubtedly dispose of such a low volume product.

It is believed that if you asked any one in our organization as to what he considered the most valuable item of control now in use, he would probably tell you the profit and loss statement by product group. It has thrown an entirely different light on our business and it is believed that it would be almost impossible for us to abandon this schedule.

(NOTE.—This concludes the second instalment of Mr. E. S. LaRose's address in Toronto on "Budgetary Control". His complete work on the subject may be found in the Year Book (1931) of the National Association of Cost Accountants.)

NEW MEMBERS

The following are new members of the Society:

Montreal Chapter

Heartz, R. E., Power Engineering Co., Ltd., Montreal.

Toronto Chapter

Brown, H. O., W. R. Johnston & Co., Ltd., Toronto.
Cleminson, F. G., Bank of Toronto, Head Office, Toronto.

Winnipeg Chapter

Elliott, G. H., Secretary-Treasurer, Carter-Halls-Aldinger Co., Ltd., Winnipeg.

Vancouver Chapter

Gostling, G. S. N., Manager, Western Sales Book Co., Ltd., Vancouver.

CHAPTER NOTES

MONTREAL

Reported by R. Schurman, C.A.

The members of the Montreal Chapter of the Canadian Society of Cost Accountants & Industrial Engineers, at their meeting on January 21st, had the unusual opportunity of obtaining at first hand, intimate information on the accounting of the Montreal Tramways Commission.

This commission represents the Montreal Tramways Company on the one part and the city of Montreal on the other. It is an independent body. Mr. A. Duperron, chief engineer of the commission, was listened to with rapt attention while he explained the sources of revenues, distribution of the expenses and division of surplus. During the lecture lantern slides were thrown on the screen, showing facts and figures concerning the operations.

A few years ago a line of autobuses was put into commission by the company as a trial service. These have proved satisfactory for traffic service on routes where it would not be possible to lay down permanent tracks. Figures submitted by Mr. Duperron show the combined revenues from the operation of the entire system of tramways and buses. Revenues are disposed of as follows: (1) Operating expenses and taxes; (2) Maintenance and Renewal Fund; (3)Interest on capital value of the property; (4) Rental to the city of Montreal; (5) Contingent reserve fund; (6) Division of surplus. This division of surplus is distributed: 50% to tolls reduction fund; 30% to the city; 20% to the company.

Their operating expenses are kept down to a minimum, and if the company spends more than their operating allowance, the company is penalized and must pay this difference from its own funds. It must be understood that the contract is based on the theory that at some time the city may expropriate the property, and one of the important factors therefore is the maintenance of the company's fixed assets in good condition, so that they will represent 100% in value should the city at any time exercise this privilege. This will explain the important reason of the maintenance and renewal fund, which defines clearly the equity in the asset value of the property, between the city and the company.

The important revenue to the company is the 6% allowance upon the capitalized value. This valuation was fixed at the time of signing the contract, by a board of experts, setting up the physical value of the property of the company, at pre-war prices and to this value any additions made since for betterments, etc., which have been duly authorized by the commission.

The city of Montreal receives as a portion of their profits, the sum of $500,000, special rental for the use of the streets. The city benefits further, because the company bears the cost of maintenance and renewal of the street paving within the track area and 18 inches additional on each side of the outside rails.

The members of the Society were exceedingly interested in the comparative charts submitted, showing comparison of revenues and passengers, carried over a period of years, in cities on this continent having similar population to that of Montreal.

The Society hope that Mr. Duperron may consent to the publication of the whole of his most interesting paper.

The chairman, Mr. R. W. Louthood, presided at the meeting, and Mr. Lorenze Belanger thanked the speaker.

TORONTO

Reported by G. Alexander Phare.

Toronto Chapter met again in the Royal York Hotel on Manday, January 18th, with Mr. Kris Mapp, C.A., in the chair. The subject of the evening was "Control of Sales and Distribution Expense", and the address on this topic was given by Mr. D. M. Farish, of the Northern Electric Company Limited, of Montreal.

We had steak again. On this occasion we are happy to state, being a scribe of marked humility and unquestioned fairness of outlook, that the steak was excellent. A more irritable type of critic might find the basis here for some comment on lack of originality on the part of the cuisine committee, but we shall refrain. We shall merely refer them to the recent series of advertisements featuring the unfortunate girl who was socially handicaped because she always ordered chicken salad when invited out to lunch. But before leaving the subject we might add that we had no idea that the corps of uniformed servitors who look after our gastronomic needs each meeting read our Chapter Notes so carefully—or that, if they did, they would take them to heart as they obviously did. Because the steak really was excellent.

The meeting promised well, even before we had come to order and Mr. Farish had brought us the greetings and good wishes of Montreal Chapter, of which he is a member, and from which city he had journeyed in order to address us. The large majority of our meetings deal with the manufacturing side of costs, although there is no reason for assuming that the duties of the Cost Accountant cease when the product is delivered to the Shipping Room door. So that an evening on controlling selling and distributing expenses promised to explore some less well-known territory than usual. Included in these expenses were advertising, salesmen's remuneration, distribution wages, merchandising investment, and accounts receivable ivestment. And the discussing of the control of these various factors was greatly helped by the multigraphed forms with which the meeting was provided.

Slightly over one hundred members and guests attended, and the discussion following the address was excellent. Salesmen's remuneration came in, perhaps, for the most conflicting comments. One is led to suspect that more than one member of the Society has rung doorbells before this, and has a reminiscent sympathy for any scheme which ensures that in boom times the salesman shall not earn too much money.

Control of merchandising investment also came in for considerable discussion, and brought some of our newer members to their feet, a

condition of things to be welcomed and continued. If we have erred this year at all, which is postulated and not admitted, it has been on the score of catering too much to the senior type of accountant and overlooking the many younger members who are still entitled to expect programs which deal more with fundamentals and less with advanced problems.

We are therefore incorporating in these notes a tabloid lesson which the veriest beginner can enjoy, on the meaning of the word Control, a word which has received some prominence in this year's program. When making up the preliminary budget for the year, which is usually done in the manager's head, some one given item of expense is estimated as $1,000.00. Experience has proven that, no matter how carefully this has been estimated, by the end of the year double that amount, or $2,000.00, will have been spent. This always happens, because unexpected items "creep in". Nobody knows why, but they always do. So by installing in the system somewhere, a stern official who blue-pencils and rejects all expenditure whatever on this particular item of expense, by the end of the year there is nothing on the ledger account at all, except, of course, the items which have "crept in". These total $1,000.00, or exactly the amount of the original budget, and in consequence the accounting department congratulate themselves on their skill and foresight. This is control. Now bring the children to the next meeting!

HAMILTON

Reported by R. Dawson.

January, 1932, will long be remembered by Hamilton Chapter members for it marked an innovation which should prove decidedly popular. Believing that at this time of the year members generally are working hard to get out inventory costs, the Executive considered it would be good business to dispense with the regular meeting and to substitute instead, a smoker. Messrs. Mouncey, Long, Horton and Dawson were appointed a committee to organize this affair and right well did they succeed in their endeavours. The smoker was held on January 7th, in the recreation rooms of the Cosmos Imperial Mills (kindly loaned for the occasion). A. J. Mouncey occupied the chair, and with Sid Brown at the piano, the merriment commenced. Messrs. Daul and Williams rendered songs in a very pleasing manner but the hit of the evening was Stan. Hall with his magic, his musical saw and his Hawaiians.

Smokes were distributed during the evening and at the close of the entertainment a lunch was provided by the Cosmos Imperial Mills, who afterwards very kindly conducted the party through the mills where several of the large looms were started up for the benefit of the guests. It was a great evening and certainly will be followed by others of a like nature.

On January 21st a large number of members attended to hear Mr. H. M. Hetherington of the Viceroy Mfg. Co., Ltd., Toronto, speak on "Cost Studies and Development of New Products".

Mr. Hetherington very kindly substituted for Mr. E. W.Carpenter, who was ill, and he certainly made a real job of it. This talk was very much enjoyed and his kindness in coming to us was much appreciated. Our general secretary, Mr. McKague, was also a very welcome guest at this meeting.

CENTRAL ONTARIO

Reported by Carl R. Dorschell.

The January meeting of our Chapter was held in Galt, at the office of Babcock-Wilcox & Goldie-McCulloch, Limited, on Wednesday, January 20, at 8 o'clock. Mr. Robert Dawson of the Hoover Company, Hamilton, addressed the meeting on a timely topic, namely, "Inventory Control". Mr. Dawson is the secretary-treasurer of Hamilton Chapter, and a busy man, but he left his work for a night to come up from Hamilton to speak to our chapter. It is too bad that some of our members couldn't leave their work for one night and attend this meeting. The attendance at this meeting was a black mark against Central Ontario Chapter, and it certainly is a shame to bring a speaker up from Hamilton and greet him with empty chairs. The membership of our chapter is small in numbers which makes it necessary for every member to make a special effort to attend all the meetings so that there will be a fair attendance at our meetings, and also that each one may get the maximum benefit out of their membership.

To get back to our topic "Inventory Control" we wish to say that the subject was well handled by Mr. Dawson. He outlined for the benefit of those present the method in use in the Hoover Company. Step by step he explained the forms and methods used in planning and ordering various quantities of raw materials and finished parts, the check up on their progress through th plant, physical check daily of quantities in stores of a certain number of items through the medium of special cards, etc. The speaker explained the benefits derived from the use of the system which he was using. Many of the forms which looked cumbersome, and also appeared to entail a lot of work, were more than worth while in the information obtained from them for the satisfactory control of the inventory. Mr. Dawson was called upon to answer a number of questions, following which a vote of thanks was tendered to him for his kindness in coming up from Hamilton to address us.

Our next meeting is to be held in Kitchener on February 17, the place of the meeting has not been arranged at present, but in all likelihood it will be at the office of Cluett, Peabody and Company of Canada, Limited. However, this will be confirmed in the notice which you will receive through the mail. The speaker is to be Mr. A. J. Mouncey, of the Norton Company of Hamilton, and the subject which he has chosen is "Practical Application of the Budget." This is a subject which should interest everyone at the present time and let us show our appreciation of Mr. Mouncey's visit by making our attendance 100%.

VANCOUVER

Reported by R. V. Kirkby.

Our meeting of January 12th was the first occasion on which the Chapter has opened a meeting with a dinner, and it proved highly successful. Owing to the indisposition of our chairman, Mr. H. D. Campbell, Mr. J. S. Dull occupied the chair. There were twenty members present.

At the conclusion of dinner, Mr. N. Terry, of the Canadian Sumner Iron Works, gave an address on "Cost Accounting in the Metal Trades Industry." This is the second occasion on which one of our own members has read a paper before the Chapter. Since both of these occasions proved very successful we are, in future, going to adopt this principle to a greater extent. Our next meeting on February 9th, which will be a dinner meeting also, will have for its speakers, Mr. Harper of the B. C. Lithographing Company, Ltd., and Mr. Kirkby, of the Associated Dairies, Ltd. The subject of the joint address will be "Pay Roll Accounting." The March meeting, to be held on March 8th, will have for its speaker Mr. G. S. McGlashan, of the B. C. Sugar Refining Co. Mr. McGlashan's subject will be "Inventory Control."

As yet no programme has been arranged for our Annual Meeting, to be held probably April 12th.

At the meeting of December 8th, Mr. M. Willis and Mr. A. Bassett were appointed as a committee to complete arrangements for the opening of a branch library for this Chapter. A directors' meeting will be called in the near future, to make final arrangements on this matter, and the result will probably be announced at the February meeting.

Cost Literature

RECEIVED IN JANUARY

ACCOUNTING for the Cost of Your Playtime Equipment. H. M. Forman. National Association of Cost Accountants Bulletin, January 1, 1932.

Budgeting in the Home. E. L. Cowan. National Association of Cost Accountants Bulletin, January 1, 1932.

Standard Rent in Our Own Building. H. H. Curnutt. National Association of Cost Accountants Bulletin, December 15, 1931.

Telephone Accounting. R. E. Driver. National Association of Cost Accountants Bulletin, December 15, 1931.

Market Analysis and Sales Control. C. M. Bigelow. National Association of Cost Accountants Bulletin, January 15, 1932.

How Accountants Can Assist the Sales Department in Controlling Costs of Distribution. W. F. Titus. National Association of Cost Accountants Bulletin, January 15, 1932.

Systematizing Accounts Receivable. C. W. Hale. Canadian Office, January, 1932.

Application of Cost Accounting in a Large Departmental Store. L. Frankland, A.C.A. Cost Accountant, January, 1932.

Accountancy of Values. O. Wunderlich, B.A., M.D. Cost Accountant, January, 1932.

A Year's Progress in Fatigue Work. Prof. G. H. Shepard. Society of Industrial Engineers Bulletin, November, 1931.

Depreciation of Appraised Values. W. A. Staub. American Accountant, January, 1932.

Industrial Pension Plans. D. R. Belcher. American Accountant, January, 1932.